

EXPANDABLE ATHERECTOMY BURR

Abstract of the Disclosure

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An atherectomy burr has an operating diameter that is larger than the diameter of a catheter in which the burr is routed. The burr may include a polymeric balloon that is coated with an abrasive and that expands when the burr is rotated. When the burr is rotated, the polymeric tube expands by centrifugal force. The maximum expansion of the burr is controlled by an expansion mechanism. Various mechanisms are disclosed for controlling the maximum diameter of the burr thus preventing the burr from over expanding. In addition, the present invention includes a system for preventing the loose ablated particulate from reembolizing in the distal vasculature. The system includes an ablation burr that has abrasive disposed on the proximal end that is pulled back toward the guide catheter to ablate the lesion. The burr creates a seal when expanded to block the ablated particulate so that the aspiration system can remove the particulate from the patient vessel or stent. Alternatively, the burr system may include a self expanding seal that is deployed out of the aspiration sheath so that a slight vacuum can remove the large loose particulate form, the patient's vessel or stent.